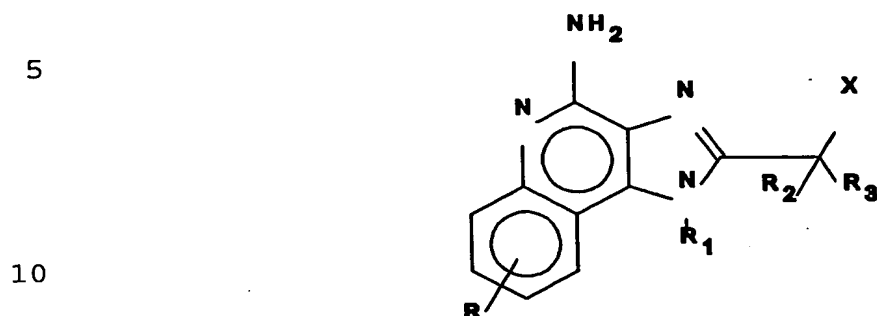


What is claimed is:

1. A compound of the formula:



wherein R₁ is selected from the group consisting of:
hydrogen; straight chain or branched chain alkyl
15 containing one to about ten carbon atoms and
substituted straight chain or branched chain alkyl
containing one to about ten carbon atoms, wherein the
substituent is selected from the group consisting of
cycloalkyl containing three to about six carbon atoms
20 and cycloalkyl containing three to about six carbon
atoms substituted by straight chain or branched chain
alkyl containing one to about four carbon atoms;
straight chain or branched chain alkenyl containing two
to about ten carbon atoms and substituted straight
25 chain or branched chain alkenyl containing two to about
ten carbon atoms, wherein the substituent is selected
from the group consisting of cycloalkyl containing
three to about six carbon atoms and cycloalkyl
containing three to about six carbon atoms substituted
30 by straight chain or branched chain alkyl containing
one to about four carbon atoms; hydroxyalkyl of one to
about six carbon atoms; alkoxyalkyl wherein the alkoxy
moiety contains one to about four carbon atoms and the
alkyl moiety contains one to about six carbon atoms;
35 acyloxyalkyl wherein the acyloxy moiety is alkanoyloxy
of two to about four carbon atoms or benzoyloxy, and
the alkyl moiety contains one to about six carbon
atoms; benzyl; (phenyl)ethyl; and phenyl; said benzyl,

(phenyl)ethyl or phenyl substituent being optionally substituted on the benzene ring by one or two moieties independently selected from the group consisting of alkyl of one to about four carbon atoms, alkoxy of one to about four carbon atoms, and halogen, with the proviso that when said benzene ring is substituted by two of said moieties, then the moieties together contain no more than six carbon atoms;

R_2 and R_3 are independently selected from the group consisting of hydrogen, alkyl of one to about four carbon atoms, phenyl, and substituted phenyl wherein the substituent is selected from the group consisting of alkyl of one to about four carbon atoms, alkoxy of one to about four carbon atoms, and halogen;

X is selected from the group consisting of alkoxy containing one to about four carbon atoms, alkoxyalkyl wherein the alkoxy moiety contains one to about four carbon atoms and the alkyl moiety contains one to about four carbon atoms, haloalkyl of one to about four carbon atoms, hydroxyalkyl of one to about four carbon atoms, alkylamido wherein the alkyl group contains one to about four carbon atoms, amino, substituted amino wherein the substituent is alkyl or hydroxyalkyl of one to about four carbon atoms, azido, chloro, hydroxy, 1-morpholino, 1-pyrrolidino, and alkylthio of one to about four carbon atoms; and

R is selected from the group consisting of hydrogen, straight chain or branched chain alkoxy containing one to about four carbon atoms, halogen, and straight chain or branched chain alkyl containing one to about four carbon atoms;

or a pharmaceutically acceptable acid addition salt thereof.

2. A compound according to Claim 1, wherein R_1 contains from two to about ten carbon atoms.

3. A compound according to Claim 1, wherein

R₁ contains from two to about eight carbon atoms.

4. A compound according to Claim 1, wherein R₁ is 2-hydroxy-2-methylpropyl or 2-methylpropyl.

5

5. A compound according to Claim 1, wherein R₁ is benzyl.

6. A compound according to Claim 1, wherein R₁ is alkoxyalkyl wherein the alkoxy moiety contains one to about four carbon atoms and the alkyl moiety contains two to about six carbon atoms.

7. A compound according to Claim 6, wherein R₁ is methoxyethyl or 3-methoxypropyl.

8. A compound according to Claim 1, wherein X is azido, ethoxy, hydroxy, methoxy, 1-morpholino, or methylthio.

20

9. A compound according to Claim 1, wherein R is hydrogen.

10. A compound according to Claim 1, wherein R₂ is hydrogen and R₃ is 4-chlorophenyl.

25

11. A compound according to Claim 1, wherein R₂ is hydrogen and R₃ is methyl.

12. A compound according to Claim 1, wherein R₂ and R₃ are methyl.

30

13. A compound according to Claim 1, wherein R₂ and R₃ are hydrogen.

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14. A compound according to Claim 1, wherein R₂ is hydrogen and R₃ is n-butyl.

15. A compound according to Claim 1, wherein R₂ is hydrogen and R₃ is phenyl.

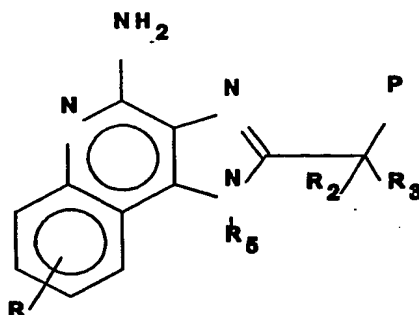
16. A compound according to Claim 1,
5 selected from the group consisting of:
N-acetyl-4-amino-1-(2-methylpropyl)-1H-imidazo[4,5-c]-
quinoline-2-methanamine;
4-amino-7-chloro-__-dimethyl-2-ethoxymethyl-1H-
imidazo[4,5-c]quinoline-1-ethanol
10 4-amino-α-(4-chlorophenyl)-1-(2-methylpropyl)-1H-
imidazo[4,5-c]quinoline-2-methanol;
4-amino-__-dimethyl-2-hydroxymethyl-1H-imidazo-
[4,5-c]quinoline-1-ethanol
4-amino-__-dimethyl-2-methoxymethyl-1H-imidazo-
15 [4,5-c]quinoline-1-ethanol
4-amino-α,α-dimethyl-1-(2-methylpropyl)-1H-imidazo-
[4,5-c]quinoline-2-methanol;
4-amino-N-hydroxyethyl-N-methyl-1-phenylmethyl-1H-
imidazo[4,5-c]quinoline-2-methanamine hemihydrate;
20 4-amino-__-methyl-1-(2-methylpropyl)-1H-imidazo[4,5-c]-
quinoline-2-ethanol
4-amino-α-methyl-1-(2-methylpropyl)-1H-imidazo[4,5-c]-
quinoline-2-methanol;
4-amino-1-(2-methylpropyl)-1H-imidazo[4,5-c]quinoline-
25 2-methanol;
4-amino-1-(2-methylpropyl)-α-phenyl-1H-imidazo[4,5-c]-
quinoline-2-methanol;
2-azidomethyl-1-(2-methylpropyl)-1H-imidazo[4,5-c]-
quinolin-4-amine;
30 2-chloromethyl-1-(2-methylpropyl)-1H-imidazo[4,5-c]-
quinolin-4-amine hydrochloride;
2-ethoxymethyl-1-(3-methoxypropyl)-1H-imidazo[4,5-c]-
quinolin-4-amine;
2-ethoxymethyl-1-(2-methylpropyl)-1H-imidazo[4,5-c]-
35 quinolin-4-amine;
2-ethoxymethyl-1-phenylmethyl-1H-imidazo[4,5-c]-
quinolin-4-amine
2-(α-methoxybenzyl)-1-(2-methylpropyl)-1H-

imidazo[4,5-c]quinolin-4-amine;
 1-(2-methoxyethyl)-2-methoxymethyl-1H-imidazo[4,5-c]-
 quinolin-4-amine;
 2-(2-methoxyethyl)-1-(2-methylpropyl)-1H-imidazo-
 5 [4,5-c]quinolin-4-amine
 2-(1-methoxyethyl)-1-(2-methylpropyl)-1H-
 imidazo[4,5-c]quinolin-4-amine;
 2-methoxymethyl-1-(2-methylpropyl)-1H-imidazo[4,5-c]-
 quinolin-4-amine;
 10 2-methoxymethyl-1-phenylmethyl-1H-imidazo[4,5-c]-
 quinolin-4-amine
 2-(1-methoxypentyl)-1-(2-methylpropyl)-1H-
 imidazo[4,5-c]quinolin-4-amine.
 2-(2-methoxypropyl)-1-(2-methylpropyl)-1H-imidazo-
 15 [4,5-c]-4-amine
 1-(2-methylpropyl)-2-morpholinomethyl-1H-
 imidazo[4,5-c]quinolin-4-amine;
 1-(2-methylpropyl)-2-pyrrolidinomethyl-1H-imidazo-
 [4,5-c]quinolin-4-amine;
 20 2-methylthiomethyl-1-phenylmethyl-1H-imidazo[4,5-c]-
 quinolin-4-amine;
 2-morpholinomethyl-1-phenylmethyl-1H-imidazo[4,5-c]-
 quinolin-4-amine; and
 2-[1-(1-morpholino)pentyl]-1-(2-methylpropyl)-1H-
 25 imidazo[4,5-c]quinolin-4-amine.

17. A compound according to Claim 1,
 selected from the group consisting of:
 4-amino- α -butyl-1-(2-methylpropyl)-1H-imidazo[4,5-c]-
 30 quinoline-2-methanol;
 4-amino-_,_-dimethyl-2-ethoxymethyl-1H-imidazo-
 [4,5-c]quinoline-1-ethanol; and
 4-amino-1-phenylmethyl-1H-imidazo[4,5-c]quinoline-2-
 methanol.

35

18. A compound of the formula:



wherein R_5 is selected from the group consisting of:
 straight chain or branched chain alkyl containing one
 to about ten carbon atoms and substituted straight
 chain or branched chain alkyl containing one to about
 ten carbon atoms, wherein the substituent is selected
 from the group consisting of cycloalkyl containing
 three to about six carbon atoms and cycloalkyl
 containing three to about six carbon atoms substituted
 by straight chain or branched chain alkyl containing
 one to about four carbon atoms; straight chain or
 branched chain alkenyl containing two to about ten
 carbon atoms and substituted straight chain or branched
 chain alkenyl containing two to about ten carbon atoms,
 wherein the substituent is selected from the group
 consisting of cycloalkyl containing three to about six
 carbon atoms and cycloalkyl containing three to about
 six carbon atoms substituted by straight chain or
 branched chain alkyl containing one to about four
 carbon atoms; alkoxyalkyl wherein the alkoxy moiety
 contains one to about four carbon atoms and the alkyl
 moiety contains one to about six carbon atoms;
 acyloxyalkyl wherein the acyloxy moiety is alkanoyloxy
 of two to about four carbon atoms or benzoyloxy, and
 the alkyl moiety contains one to about six carbon
 atoms; benzyl; (phenyl)ethyl; and phenyl; said benzyl,
 (phenyl)ethyl or phenyl substituent being optionally
 substituted on the benzene ring by one or two moieties

independently selected from the group consisting of
alkyl of one to about four carbon atoms, alkoxy of one
to about four carbon atoms, and halogen, with the
proviso that when said benzene ring is substituted by
5 two of said moieties, then the moieties together
contain no more than six carbon atoms;

R_2 and R_3 are independently selected from the
group consisting of hydrogen, alkyl of one to about
four carbon atoms, phenyl, and substituted phenyl
10 wherein the substituent is selected from the group
consisting of alkyl of one to about four carbon atoms,
alkoxy of one to about four carbon atoms, and halogen;

P is selected from the group consisting of
alkanolyloxy, alkanoyloxyalkyl wherein the alkyl moiety
15 contains one to about four carbon atoms, and aroyloxy;
and

R is selected from the group consisting of
hydrogen, straight chain or branched chain alkoxy
containing one to about four carbon atoms, halogen, and
20 straight chain or branched chain alkyl containing one
to about four carbon atoms.

19. A compound according to Claim 18,
wherein R_5 contains from two to about ten carbon atoms.
25

20. A compound according to Claim 18,
wherein R_5 contains from two to about eight carbon
atoms.

30 21. A compound according to Claim 18,
wherein R_5 is 2-methylpropyl.

22. A compound according to Claim 18,
wherein R_5 is benzyl.
35

23. A compound according to Claim 18,
wherein R_5 is alkoxyalkyl wherein the alkoxy moiety
contains one to about four carbon atoms and the alkyl

moiety contains one to about six carbon atoms.

24. A compound according to Claim 18,
wherein R₅ is methoxyethyl or 3-methoxypropyl.

5

25. A compound according to Claim 18,
wherein P is acetoxy or benzoyloxy.

26. A compound according to Claim 18,
wherein R is hydrogen.

10

27. A compound according to Claim 18,
wherein R₂ is hydrogen and R₃ is 4-chlorophenyl.

15

28. A compound according to Claim 18,
wherein R₂ is hydrogen and R₃ is methyl.

29. A compound according to Claim 18,
wherein R₂ and R₃ are methyl.

20

30. A compound according to Claim 18,
wherein R₂ and R₃ are hydrogen.

31. A compound according to Claim 18,
wherein R₂ is hydrogen and R₃ is n-butyl.

25

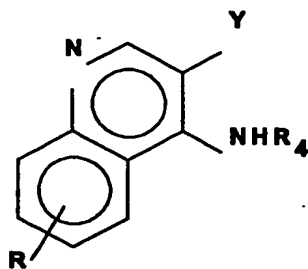
32. A compound according to Claim 18,
wherein R₂ is hydrogen and R₃ is phenyl.

30

33. A compound according to Claim 18,
selected from the group consisting of 4-amino-__methyl-
1-(2-methylpropyl)-1H-imidazo[4,5-c]quinoline-2-methyl
acetate and 4-amino-__methyl-1-(2-methylpropyl)-1H-
imidazo[4,5-c]quinoline-2-ethyl acetate.

35

34. A compound of the formula



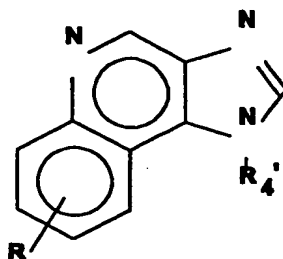
wherein Y is $-\text{NO}_2$ or $-\text{NH}_2$;

R_4 is alkoxyalkyl wherein the alkoxy moiety contains one to about four carbon atoms and the alkyl moiety contains two to about six carbon atoms; and

R is selected from the group consisting of hydrogen, straight chain or branched chain alkoxy containing one to about four carbon atoms, halogen, and straight chain or branched chain alkyl containing one to about four carbon atoms.

35. A compound according to Claim 34, wherein R_4 is methoxyethyl or 3-methoxypropyl.

36. A compound of the formula



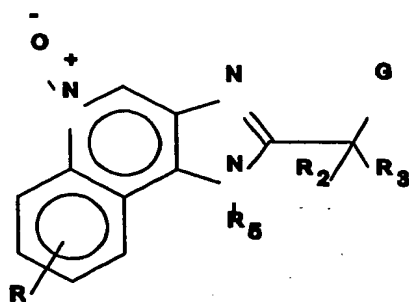
wherein R_4' is alkoxyalkyl wherein the alkoxy moiety contains one to about four carbon atoms and the alkyl moiety contains one to about six carbon atoms; and

R is selected from the group consisting of hydrogen, straight chain or branched chain alkoxy containing one to about four carbon atoms, halogen, and straight chain or branched chain alkyl containing one to about four carbon atoms.

37. A compound according to Claim 36, wherein R_4 is methoxyethyl or 3-methoxypropyl.

38. A compound according to Claim 36, wherein R is hydrogen.

39. A compound of the formula



wherein R_5 is selected from the group consisting of: straight chain or branched chain alkyl containing one to about ten carbon atoms and substituted straight chain or branched chain alkyl containing one to about ten carbon atoms, wherein the substituent is selected from the group consisting of cycloalkyl containing three to about six carbon atoms and cycloalkyl containing three to about six carbon atoms substituted by straight chain or branched chain alkyl containing one to about four carbon atoms; straight chain or branched chain alkenyl containing two to about ten carbon atoms and substituted straight chain or branched chain alkenyl containing two to about ten carbon atoms, wherein the substituent is selected from the group consisting of cycloalkyl containing three to about six carbon atoms and cycloalkyl containing three to about

six carbon atoms substituted by straight chain or branched chain alkyl containing one to about four carbon atoms; alkoxyalkyl wherein the alkoxy moiety contains one to about four carbon atoms and the alkyl moiety contains one to about six carbon atoms; acyloxyalkyl wherein the acyloxy moiety is alkanoyloxy of two to about four carbon atoms or benzoyloxy, and the alkyl moiety contains one to about six carbon atoms; benzyl; (phenyl)ethyl; and phenyl; said benzyl, (phenyl)ethyl, or phenyl substituent being optionally substituted on the benzene ring by one or two moieties independently selected from the group consisting of alkyl of one to about four carbon atoms, alkoxy of one to about four carbon atoms, and halogen, with the proviso that when said benzene ring is substituted by two of said moieties, then the moieties together contain no more than six carbon atoms;

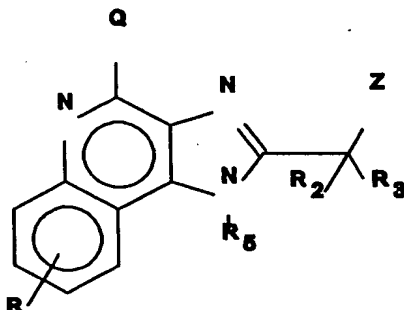
R_2 and R_3 are independently selected from the group consisting of hydrogen, alkyl of one to about four carbon atoms, phenyl, and substituted phenyl wherein the substituent is selected from the group consisting of alkyl of one to about four carbon atoms, alkoxy of one to about four carbon atoms, and halogen;

G is selected from the group consisting of alkoxy containing one to about four carbon atoms, alkoxyalkyl wherein the alkoxy moiety contains one to about four carbon atoms and the alkyl moiety contains one to about four carbon atoms, alkylamido wherein the alkyl group contains one to about four carbon atoms, azido, chloro, 1-morpholino, 1-pyrrolidino, alkylthio of one to about four carbon atoms, alkanoyloxy, alkanoyloxyalkyl wherein the alkyl moiety contains one to about four carbon atoms, and aroyloxy, with the proviso that when G is alkylamido then R_5 is alkenyl, substituted alkenyl, or alkoxyalkyl; and

R is selected from the group consisting of hydrogen, straight chain or branched chain alkoxy containing one to about four carbon atoms, halogen, and

straight chain or branched chain alkyl containing one to about four carbon atoms.

40. A compound of the formula



wherein R₅ is selected from the group consisting of:
straight chain or branched chain alkyl containing one
to about ten carbon atoms and substituted straight
chain or branched chain alkyl containing one to about
ten carbon atoms, wherein the substituent is selected
from the group consisting of cycloalkyl containing
three to about six carbon atoms and cycloalkyl
containing three to about six carbon atoms substituted
by straight chain or branched chain alkyl containing
one to about four carbon atoms; straight chain or
branched chain alkenyl containing two to about ten
carbon atoms and substituted straight chain or branched
chain alkenyl containing two to about ten carbon atoms,
wherein the substituent is selected from the group
consisting of cycloalkyl containing three to about six
carbon atoms and cycloalkyl containing three to about
six carbon atoms substituted by straight chain or
branched chain alkyl containing one to about four
carbon atoms; alkoxyalkyl wherein the alkoxy moiety
contains one to about four carbon atoms and the alkyl
moiety contains one to about six carbon atoms;
acyloxyalkyl wherein the acyloxy moiety is alkanoyloxy
of two to about four carbon atoms or benzoyloxy, and

the alkyl moiety contains one to about six carbon atoms; benzyl; (phenyl)ethyl; and phenyl; said benzyl, (phenyl)ethyl, or phenyl substituent being optionally substituted on the benzene ring by one or two moieties independently selected from the group consisting of alkyl of one to about four carbon atoms, alkoxy of one to about four carbon atoms, and halogen, with the proviso that when said benzene ring is substituted by two of said moieties, then the moieties together contain no more than six carbon atoms;

R_2 and R_3 are independently selected from the group consisting of hydrogen, alkyl of one to about four carbon atoms, phenyl, and substituted phenyl wherein the substituent is selected from the group consisting of alkyl of one to about four carbon atoms, alkoxy of one to about four carbon atoms, and halogen;

Z is selected from the group consisting of alkoxy containing one to about four carbon atoms, alkoxyalkyl wherein the alkoxy moiety contains one to about four carbon atoms and the alkyl moiety contains one to about four carbon atoms, hydroxyalkyl containing one to about four carbon atoms, oxoalkyl of two to about four carbon atoms, alkanoyloxyalkyl wherein the alkyl moiety contains one to about four carbon atoms, alkylamido wherein the alkyl group contains one to about four carbon atoms, substituted amino wherein the substituent is alkyl or hydroxyalkyl of one to about four carbon atoms, azido, chloro, 1-morpholino, 1-pyrrolidino, alkylthio of one to about four carbon atoms, hydroxy, alkanoyloxy, and aroyloxy;

Q is selected from the group consisting of hydrogen, chloro, and R_1 -E-NH- wherein R_1 is an organic group substantially inert to quinoline N-oxides and E is a hydrolytically active functional group; with the proviso that when Q is R_1 -E-NH, then Z is other than hydroxy, substituted amino, or hydroxyalkyl as defined above, and with the further proviso that when Q is hydrogen or chloro and Z is alkylamido or hydroxyalkyl,

then R₅ is alkenyl, substituted alkenyl, or alkoxyalkyl;
and

5 R is selected from the group consisting of
hydrogen, straight chain or branched chain alkoxy
containing one to about four carbon atoms, halogen, and
straight chain or branched chain alkyl containing one
to about four carbon atoms.

10 41. An antiviral pharmaceutical composition
comprising a compound according to Claim 1 and a
pharmaceutically acceptable vehicle, the compound being
present in an amount effective to inhibit and/or
prevent the progress of a viral infection.

15 42. A method of treating a mammal infected
with a virus, comprising administering to the mammal a
compound according to Claim 1 in an amount effective to
inhibit and/or prevent the infection.

20 43. A method according to Claim 42, wherein
the virus is Type II Herpes simplex.

25 44. A method of inducing interferon
biosynthesis in a mammal, which method comprises
administering to the mammal a compound according to
Claim 1 in an amount sufficient to induce interferon
biosynthesis.

30 45. A method of inhibiting the growth of a
tumor in a mammal, which method comprises administering
to the mammal a compound according to Claim 1 in an
amount sufficient to inhibit the growth of said tumor.

35 46. A compound according to Claim 1, wherein
R₁ is selected from the group consisting of: hydrogen;
straight chain or branched chain alkyl containing one
to about ten carbon atoms and substituted straight
chain or branched chain alkyl containing one to about

ten carbon atoms, wherein the substituent is selected from the group consisting of cycloalkyl containing three to about six carbon atoms and cycloalkyl containing three to about six carbon atoms substituted by straight chain or branched chain alkyl containing one to about four carbon atoms; straight chain or branched chain alkenyl containing two to about ten carbon atoms and substituted straight chain or branched chain alkenyl containing two to about ten carbon atoms, wherein the substituent is selected from the group consisting of cycloalkyl containing three to about six carbon atoms and cycloalkyl containing three to about six carbon atoms substituted by straight chain or branched chain alkyl containing one to about four carbon atoms; hydroxyalkyl of one to about six carbon atoms; alkoxyalkyl wherein the alkoxy moiety contains one to about four carbon atoms and the alkyl moiety contains one to about six carbon atoms; acyloxyalkyl wherein the acyloxy moiety is alkanoyloxy of two to about four carbon atoms or benzoyloxy, and the alkyl moiety contains one to about six carbon atoms; benzyl; (phenyl)ethyl; and phenyl; said benzyl, (phenyl)ethyl or phenyl substituent being optionally substituted on the benzene ring by one or two moieties independently selected from the group consisting of alkyl of one to about four carbon atoms, alkoxy of one to about four carbon atoms, and halogen, with the proviso that when said benzene ring is substituted by two of said moieties, then the moieties together contain no more than six carbon atoms;

R_2 and R_3 are independently selected from the group consisting of hydrogen, alkyl of one to about four carbon atoms, phenyl, and substituted phenyl wherein the substituent is selected from the group consisting of alkyl of one to about four carbon atoms, alkoxy of one to about four carbon atoms, and halogen;

X is selected from the group consisting of alkoxy containing one to about four carbon atoms,

alkylamido wherein the alkyl group contains one to about four carbon atoms, amino, substituted amino wherein the substituent is alkyl or hydroxyalkyl of one to about four carbon atoms, azido, chloro, hydroxy, 1-morpholino, 1-pyrrolidino, and alkylthio of one to about four carbon atoms; and

R is selected from the group consisting of hydrogen, straight chain or branched chain alkoxy containing one to about four carbon atoms, halogen, and straight chain or branched chain alkyl containing one to about four carbon atoms;

or a pharmaceutically acceptable acid addition salt thereof.

47. A compound according to Claim 1, selected from the group consisting of 2-ethoxymethyl-1-(3-methylbutyl)-1H-imidazo[4,5-c]quinolin-4-amine, 4-amino- α,α -dimethyl-2-methoxymethyl-1H-imidazo[4,5-c]quinoline-1-ethanol, 1-butyl-2-methoxyethyl-1H-imidazo[4,5-c]quinolin-4-amine, 1-butyl-2-ethoxymethyl-1H-imidazo[4,5-c]quinolin-4-amine, 4-amino-2-ethoxymethyl- α -ethyl- α -methyl-1H-imidazo[4,5-c]quinoline-1-ethanol, and 4-amino-1-butyl-1H-imidazo[4,5-c]quinoline-2-methanol,

or a pharmaceutically acceptable acid addition salt thereof.